FUJITSU

SPARC Enterprise

M3000/M4000/M5000/M8000/M9000 Servers

RCI User's Guide

C120-E360-06EN

C120-E360-06EN

SPARC® Enterprise M3000/M4000/M5000/M8000/M9000 Servers RCI User's Guide

FUJITSU

Copyright 2007-2008 FUJITSU LIMITED, 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki-shi, Kanagawa-ken 211-8588, Japan. All rights reserved.

Sun Microsystems, Inc. provided technical input and review on portions of this material.

Sun Microsystems, Inc. and Fujitsu Limited each own or control intellectual property rights relating to products and technology described in this document, and such products, technology and this document are protected by copyright laws, patents and other intellectual property laws and international treaties. The intellectual property rights of Sun Microsystems, Inc. and Fujitsu Limited in such products, technology and this document include, without limitation, one or more of the United States patents listed at http://www.sun.com/patents and one or more additional patents or patent applications in the United States or other countries.

This document and the product and technology to which it pertains are distributed under licenses restricting their use, copying, distribution, and decompilation. No part of such product or technology, or of this document, may be reproduced in any form by any means without prior written authorization of Fujitsu Limited and Sun Microsystems, Inc., and their applicable licensors, if any. The furnishing of this document to you does not give you any rights or licenses, express or implied, with respect to the product or technology to which it pertains, and this document does not contain or represent any commitment of any kind on the part of Fujitsu Limited or Sun Microsystems, Inc., or any affiliate of either of them.

This document and the product and technology described in this document may incorporate third-party intellectual property copyrighted by and/or licensed from suppliers to Fujitsu Limited and/or Sun Microsystems, Inc., including software and font technology.

Per the terms of the GPL or LGPL, a copy of the source code governed by the GPL or LGPL, as applicable, is available upon request by the End User. Please contact Fujitsu Limited or Sun Microsystems, Inc

This distribution may include materials developed by third parties.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and in other countries, exclusively licensed through X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, Java, Netra, Solaris, Sun Ray, Answerbook2, docs.sun.com, OpenBoot, and Sun Fire are trademarks or registered trademarks of Sun Microsystems, Inc., or its subsidiaries, in the U.S. and other countries.

Fujitsu and the Fujitsu logo are registered trademarks of Fujitsu Limited.

All SPARC trademarks are used under license and are registered trademarks of SPARC International, Inc. in the U.S. and other countries. Products bearing SPARC trademarks are based upon architecture developed by Sun Microsystems, Inc.

SPARC64 is a trademark of SPARC International, Inc., used under license by Fujitsu Microelectronics, Inc. and Fujitsu Limited.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

United States Government Rights - Commercial use. U.S. Government users are subject to the standard government user license agreements of Sun Microsystems, Inc. and Fujitsu Limited and the applicable provisions of the FAR and its supplements.

Disclaimer: The only warranties granted by Fujitsu Limited, Sun Microsystems, Inc. or any affiliate of either of them in connection with this document or any product or technology described herein are those expressly set forth in the license agreement pursuant to which the product or technology is provided. EXCEPT AS EXPRESSLY SET FORTH IN SUCH AGREEMENT, FUJITSU LIMITED, SUN MICROSYSTEMS, INC. AND THEIR AFFILIATES MAKE NO REPRESENTATIONS OR WARRANTIES OF ANY KIND (EXPRESS OR IMPLIED) REGARDING SUCH PRODUCT OR TECHNOLOGY OR THIS DOCUMENT, WHICH ARE ALL PROVIDED AS IS, AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID. Unless otherwise expressly set forth in such agreement, to the extent allowed by applicable law, in no event shall Fujitsu Limited, Sun Microsystems, Inc. or any of their affiliates have any liability to any third party under any legal theory for any loss of revenues or profits, loss of use or data, or business interruptions, or for any indirect, special, incidental or consequential damages, even if advised of the possibility of such damages.

DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

Please
Recycle

C120-E360-06EN

Copyright 2007-2008 FUJITSU LIMITED, 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki-shi, Kanagawa-ken 211-8588, Japon. Tous droits réservés.

Entrée et revue tecnical fournies par Sun Microsystems, Incl sur des parties de ce matériel.

Sun Microsystems, Inc. et Fujitsu Limited détiennent et contrôlent toutes deux des droits de propriété intellectuelle relatifs aux produits et technologies décrits dans ce document. De même, ces produits, technologies et ce document sont protégés par des lois sur le copyright, des brevets, d'autres lois sur la propriété intellectuelle et des traités internationaux. Les droits de propriété intellectuelle de Sun Microsystems, Inc. et Fujitsu Limited concernant ces produits, ces technologies et ce document comprennent, sans que cette liste soit exhaustive, un ou plusieurs des brevets déposés aux États-Unis et indiqués à l'adresse http://www.sun.com/patents de même qu'un ou plusieurs brevets ou applications brevetées supplémentaires aux États-Unis et dans d'autres pays.

Ce document, le produit et les technologies afférents sont exclusivement distribués avec des licences qui en restreignent l'utilisation, la copie, la distribution et la décompilation. Aucune partie de ce produit, de ces technologies ou de ce document ne peut être reproduite sous quelque forme que ce soit, par quelque moyen que ce soit, sans l'autorisation écrite préalable de Fujitsu Limited et de Sun Microsystems, Inc., et de leurs éventuels bailleurs de licence. Ce document, bien qu'il vous ait été fourni, ne vous confère aucun droit et aucune licence, expresses ou tacites, concernant le produit ou la technologie auxquels il se rapporte. Par ailleurs, il ne contient ni ne représente aucun engagement, de quelque type que ce soit, de la part de Fujitsu Limited ou de Sun Microsystems, Inc., ou des sociétés affiliées.

Ce document, et le produit et les technologies qu'il décrit, peuvent inclure des droits de propriété intellectuelle de parties tierces protégés par copyright et/ou cédés sous licence par des fournisseurs à Fujitsu Limited et/ou Sun Microsystems, Inc., y compris des logiciels et des technologies relatives aux polices de caractères.

Par limites du GPL ou du LGPL, une copie du code source régi par le GPL ou LGPL, comme applicable, est sur demande vers la fin utilsateur disponible; veuillez contacter Fujitsu Limted ou Sun Microsystems, Inc.

Cette distribution peut comprendre des composants développés par des tierces parties.

Des parties de ce produit pourront être dérivées des systèmes Berkeley BSD licenciés par l'Université de Californie. UNIX est une marque déposée aux Etats-Unis et dans d'autres pays et licenciée exclusivement par X/Open Company, Ltd.

Sun, Sun Microsystems, le logo Sun, Java, Netra, Solaris, Sun Ray, Answerbook2, docs.sun.com, OpenBoot, et Sun Fire sont des marques de fabrique ou des marques déposées de Sun Microsystems, Inc., ou ses filiales, aux Etats-Unis et dans d'autres pays.

Fujitsu et le logo Fujitsu sont des marques déposées de Fujitsu Limited.

Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays. Les produits portant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

SPARC64 est une marques déposée de SPARC International, Inc., utilisée sous le permis par Fujitsu Microelectronics, Inc. et Fujitsu Limited.

L'interface d'utilisation graphique OPEN LOOK et Sun™ a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox pour la recherche et le développement du concept des interfaces d'utilisation visuelle ou graphique pour l'industrie de l'informatique. Sun détient une license non exclusive de Xerox sur l'interface d'utilisation graphique Xerox, cette licence couvrant également les licenciés de Sun qui mettent en place l'interface d'utilisation graphique OPEN LOOK et qui, en outre, se conforment aux licences écrites de Sun.

Droits du gouvernement américain - logiciel commercial. Les utilisateurs du gouvernement américain sont soumis aux contrats de licence standard de Sun Microsystems, Inc. et de Fujitsu Limited ainsi qu'aux clauses applicables stipulées dans le FAR et ses suppléments.

Avis de non-responsabilité: les seules garanties octroyées par Fujitsu Limited, Sun Microsystems, Inc. ou toute société affiliée de l'une ou l'autre entité en rapport avec ce document ou tout produit ou toute technologie décrit(e) dans les présentes correspondent aux garanties expressément stipulées dans le contrat de licence régissant le produit ou la technologie fourni(e). SAUF MENTION CONTRAIRE EXPRESSÉMENT STIPULÉE DANS CE CONTRAT, FUJITSU LIMITED, SUN MICROSYSTEMS, INC. ET LES SOCIÉTÉS AFFILIÉES REJETTENT TOUTE REPRÉSENTATION OU TOUTE GARANTIE, QUELLE QU'EN SOIT LA NATURE (EXPRESSE OU IMPLICITE) CONCERNANT CE PRODUIT, CETTE TECHNOLOGIE OU CE DOCUMENT, LESQUELS SONT FOURNIS EN L'ÉTAT. EN OUTRE, TOUTES LES CONDITIONS, REPRÉSENTATIONS ET GARANTIES EXPRESSES OU TACITES, Y COMPRIS NOTAMMENT TOUTE GARANTIE IMPLICITE RELATIVE À LA QUALITÉ MARCHANDE, À L'APTITUDE À UNE UTILISATION PARTICULIÈRE OU À L'ABSENCE DE CONTREFAÇON, SONT EXCLUES, DANS LA MESURE AUTORISÉE PAR LA LOI APPLICABLE. Sauf mention contraire expressément stipulée dans ce contrat, dans la mesure autorisée par la loi applicable, en aucun cas Fujitsu Limited, Sun Microsystems, Inc. ou l'une de leurs filiales ne sauraient être tenues responsables envers une quelconque partie tierce, sous quelque théorie juridique que ce soit, de tout manque à gagner ou de perte de profit, de problèmes d'utilisation ou de perte de données, ou d'interruptions d'activités, ou de tout dommage indirect, spécial, secondaire ou consécutif, même si ces entités ont été préalablement informées d'une telle éventualité.

LA DOCUMENTATION EST FOURNIE "EN L'ETAT" ET TOUTES AUTRES CONDITIONS, DECLARATIONS ET GARANTIES EXPRESSES OU TACITES SONT FORMELLEMENT EXCLUES, DANS LA MESURE AUTORISEE PAR LA LOI APPLICABLE, Y COMPRIS NOTAMMENT TOUTE GARANTIE IMPLICITE RELATIVE A LA QUALITE MARCHANDE, A L'APTITUDE A UNE UTILISATION PARTICULIERE OU A L'ABSENCE DE CONTREFACON.

Preface

This manual describes the Remote Cabinet Interface (RCI) function on SPARC® Enterprise series servers. This manual is intended for users, specifically system management/maintenance administrators. However, when carrying out actual operations, authorized service personnels do it.

Be sure to also read the *SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers XSCF User's Guide* and other manuals referenced in this manual.

This section includes:

- Audience
- Glossary
- Structure and Contents of this Manual
- SPARC Enterprise Mx000 Servers Documentation
- Abbreviated References to Other Documents
- Models
- Text Conventions
- Prompt Notations
- Syntax of the Command-Line Interface (CLI)
- Fujitsu Welcomes Your Comments

Audience

This manual is intended for users, specifically SPARC Enterprise system management/maintenance administrators. Moreover, the system administrator is required to have the following knowledge:

- Solaris™ Operating System (Solaris OS) and Unix command
- SPARC Enterprise system and basic knowledge of XSCF

Glossary

For the terms used in the "SPARC Enterprise Mx000 Servers Documentation", refer to the *SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers Glossary*.

Structure and Contents of this Manual

This manual is organized as described below:

CHAPTER 1 RCI Overview

This chapter gives an overview of the Remote Cabinet Interface (RCI).

CHAPTER 2 Setup of the RCI for Operation

This chapter describes setup information for use of the RCI.

CHAPTER 3 Command Reference

This chapter describes the RCI command.

CHAPTER 4 Error Status

This chapter describes the error status codes.

SPARC Enterprise Mx000 Servers Documentation

The manuals listed below are provided for reference.

Book Titles	Manual Codes
SPARC Enterprise M3000 Server Site Planning Guide	C120-H030
SPARC Enterprise M4000/M5000 Servers Site Planning Guide	C120-H015
SPARC Enterprise M8000/M9000 Servers Site Planning Guide	C120-H014
SPARC Enterprise Equipment Rack Mounting Guide	C120-H016
SPARC Enterprise M3000 Server Getting Started Guide	C120-E536
SPARC Enterprise M4000/M5000 Servers Getting Started Guide	C120-E345
SPARC Enterprise M8000/M9000 Servers Getting Started Guide	C120-E323
SPARC Enterprise M3000 Server Overview Guide	C120-E537
SPARC Enterprise M4000/M5000 Servers Overview Guide	C120-E346
SPARC Enterprise M8000/M9000 Servers Overview Guide	C120-E324
Important Safety Information for Hardware Systems	C120-E391
SPARC Enterprise M3000 Server Safety and Compliance Guide	C120-E538
SPARC Enterprise M4000/M5000 Servers Safety and Compliance Guide	C120-E348
SPARC Enterprise M8000/M9000 Servers Safety and Compliance Guide	C120-E326
External I/O Expansion Unit Safety and Compliance Guide	C120-E457
SPARC Enterprise M4000 Server Unpacking Guide	C120-E349
SPARC Enterprise M5000 Server Unpacking Guide	C120-E350
SPARC Enterprise M8000/M9000 Servers Unpacking Guide	C120-E327
SPARC Enterprise M3000 Server Installation Guide	C120-E539
SPARC Enterprise M4000/M5000 Servers Installation Guide	C120-E351
SPARC Enterprise M8000/M9000 Servers Installation Guide	C120-E328
SPARC Enterprise M3000 Server Service Manual	C120-E540
SPARC Enterprise M4000/M5000 Servers Service Manual	C120-E352
SPARC Enterprise M8000/M9000 Servers Service Manual	C120-E330
External I/O Expansion Unit Installation and Service Manual	C120-E329
SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers RCI Build Procedure	C120-E361
SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers Administration Guide	C120-E331
SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers XSCF User's Guide	C120-E332
SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers XSCF Reference Manual	C120-E333
SPARC Enterprise M4000/M5000/M8000/M9000 Servers Dynamic Reconfiguration (DR) User's Guide	C120-E335
SPARC Enterprise M4000/M5000/M8000/M9000 Servers Capacity on Demand (COD) User's Guide	C120-E336

Book Titles	Manual Codes
SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers RCI User's Guide	C120-E360
SPARC Enterprise M3000 Server Product Notes	Go to the Web
SPARC Enterprise M4000/M5000 Servers Product Notes	Go to the Web
SPARC Enterprise M8000/M9000 Servers Product Notes	Go to the Web
External I/O Expansion Unit Product Notes	C120-E456
SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers Glossary	C120-E514
SPARC Enterprise/PRIMEQUEST Common Installation Planning Manual	C120-H007

1 Manuals on the Web
The latest versions of all the SPARC Enterprise Series manuals are available at the following websites.
Global Site
`http://www.fujitsu.com/sparcenterprise/manual/`
Japanese Site
`http://primeserver.fujitsu.com/sparcenterprise/manual/`

Note: Product Notes is available on the website only. Please check for the recent update on your product.

2 Documentation CD
For the Documentation CD, please contact your local sales representative.
- SPARC Enterprise M3000 Server Documentation CD (C120-E541)
- SPARC Enterprise M4000/M5000 Servers Documentation CD (C120-E365)
- SPARC Enterprise M8000/M9000 Servers Documentation CD (C120-E364)

3 Manual included on the Enhanced Support Facility x.x CD-ROM disk
- Remote maintenance service

Book Title	Manual Code
Enhanced Support Facility User's Guide for REMCS	C112-B067

4 Manual (man page) provided in the system
XSCF man page

Note: The man page can be referenced on the XSCF Shell, and it provides the same content as the *SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers XSCF Reference Manual*.

5 Documentation and Support on the Web
The latest information about other documents and the support for your server are provided on the websites.

1 Message
Global Site
http://www.fujitsu.com/sparcenterprise/msg/
Japanese Site
http://primeserver.fujitsu.com/sparcenterprise/msg/

2 Firmware program
You can download the latest files of firmware at the following websites.
Global Site
http://www.fujitsu.com/sparcenterprise/firmware/
Japanese Site
http://primeserver.fujitsu.com/sparcenterprise/download/firmware/
The following files or document are provided.

- Firmware program file (XSCF Control Package (XCP) file)
- XSCF extension MIB definition file

Note: XSCF Control Package (XCP) : XCP is a package which has the control programs of hardware that configures a computing system. The XSCF firmware and the OpenBoot™ PROM firmware are included in the XCP file.

3 Fault Management MIB (SUN-FM-MIB) definition file
http://src.opensolaris.org/source/xref/onnv/onnv-gate/usr/src/lib/fm/libfmd_snmp/mibs/

6 Solaris Operating System Related Manuals
http://docs.sun.com

7 Provided In firmware program CD (For maintenance service <for FEs>)

- Firmware program file (XSCF Control Package (XCP) file)
- XSCF extension MIB definition file

8 Information on Using the RCI function
The manual does not contain an explanation of the RCI build procedure. For information on using the RCI function, refer to the *SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers RCI Build Procedure* available on the website.

Abbreviated References to Other Documents

In this manual, the following abbreviated titles may be used when referring to a systems manual. The following table lists the abbreviations used in this manual.

Abbreviated Title	Full Title
Overview Guide	SPARC Enterprise M3000 Server Overview Guide SPARC Enterprise M4000/M5000 Servers Overview Guide SPARC Enterprise M8000/M9000 Servers Overview Guide
Service Manual	SPARC Enterprise M3000 Server Service Manual SPARC Enterprise M4000/M5000 Servers Service Manual SPARC Enterprise M8000/M9000 Servers Service Manual
Installation Guide	SPARC Enterprise M3000 Server Installation Guide SPARC Enterprise M4000/M5000 Servers Installation Guide SPARC Enterprise M8000/M9000 Servers Installation Guide
Administration Guide	SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers Administration Guide
XSCF User's Guide	SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers XSCF User's Guide
XSCF Reference Manual	SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers XSCF Reference Manual
Glossary	SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers Glossary

Models

The model names used in this manual are as follows.

Server class	Model name
Entry-level	SPARC Enterprise M3000
Midrange	SPARC Enterprise M4000 SPARC Enterprise M5000
High-end	SPARC Enterprise M8000 SPARC Enterprise M9000

Text Conventions

This manual uses the following fonts and symbols to express specific types of information.

Fonts/symbols	Meaning	Examples
AaBbCc123	What you type, when contrasted with on-screen computer output. This font represents the example of command input in the frame.	XSCF> **adduser jsmith**
AaBbCc123	The names of commands, files, and directories; on-screen computer output. This font represents the example of command output in the frame.	XSCF> **showuser -p** User Name: jsmith Privileges: useradm auditadm
Italic font	Indicates the name of a reference manual.	See the *XSCF Reference Manual*.
" "	Indicates names of chapters, sections, items, buttons, or menus.	See Chapter 2, "Setup of the RCI for Operation."

Prompt Notations

The prompt notations used in this manual are as follows

Shell	Prompt Notations
XSCF	XSCF>
C shell	*machine-name*%
C shell super user	*machine-name*#
Bourne shell and Korn shell	$
Bourne shell and Korn shell super user	#
OpenBoot PROM	ok

Syntax of the Command-Line Interface (CLI)

The command syntax is described below.

Command syntax

The command syntax is as follows:

- A variable that requires input of a value must be enclosed in <>.
- An optional element must be enclosed in [ ].
- A group of options for an optional keyword must be enclosed in [ ] and delimited by |.
- A group of options for a mandatory keyword must be enclosed in {} and delimited by |.

- The command syntax is shown in a box.

Example:

```
XSCF> showuser -a
```

Fujitsu Welcomes Your Comments

If you have any comments or requests regarding this manual, or if you find any unclear statements in the manual, please state your points specifically on the form at the following URL.

For Users in U.S.A., Canada, and Mexico:

http://www.computers.us.fujitsu.com/www/support_servers.shtml?support/servers

For Users in Other Countries:

SPARC Enterprise contact

http://www.fujitsu.com/global/contact/computing/sparce_index.html

Contents

Preface i

CHAPTER 1 RCI Overview 1-1

1.1 RCI Features 1-1
RCI redundancy (only for the high-end system) 1-2
1.2 RCI Functions. 1-2
RCI network status monitoring 1-2
Control of power supply to RCI I/O units 1-2
Interlocking mechanism for power supply to domains 1-2
Facility control 1-3
Power-on wait 1-3
Asynchronous RCI monitoring 1-3
1.3 RCI Connection Scheme 1-4
Basic configuration 1-4
Cluster configuration 1-5
Duplicated configuration 1-5

CHAPTER 2 Setup of the RCI for Operation 2-1

2.1 Overview of RCI Setup 2-1
2.2 RCI Setup for Initial Installation 2-2
2.2.1 RCI setup flow 2-2
2.2.2 Confirming RCI initialization 2-2
To confirm RCI initialization: 2-2
2.2.3 Connecting RCI cables 2-3
2.2.4 Making an RCI address setting 2-3
To specify an RCI address: 2-3
To confirm an RCI address: 2-3
2.2.5 Making an RCI construction setting 2-3
To make an RCI construction setting: 2-4
To confirm an RCI construction setting: 2-4
2.3 RCI Setup for Addition of an RCI I/O Unit 2-4
2.3.1 RCI setup flow 2-4
2.3.2 Connecting an RCI cable 2-5
2.3.3 Making an RCI expansion setting 2-5
To make an RCI expansion setting: 2-5
To confirm an RCI expansion setting: 2-5
2.4 RCI Setup for Addition of an RCI Base Cabinet 2-6
2.4.1 RCI setup flow 2-6
2.4.2 Confirming RCI initialization 2-6
To confirm RCI initialization: 2-6
2.4.3 Connecting an RCI cable 2-6

2.4.4 Making an RCI address setting 2-7
To specify an RCI address: 2-7
To confirm the specified RCI address: 2-7
2.4.5 Making an RCI expansion setting 2-8
To make an RCI expansion setting: 2-8
To confirm an RCI expansion setting: 2-8
2.5 RCI Setup for Replacement of an RCI I/O Unit 2-9
2.5.1 RCI setup flow 2-9
2.5.2 Confirming an RCI address 2-9
To confirm an RCI address: 2-9
To confirm the location of an RCI I/O unit: 2-10
2.5.3 Replacing an RCI I/O Unit 2-10
2.5.4 Making an RCI replacement setting. 2-11
To make an RCI replacement setting: 2-11
To confirm an RCI replacement setting: 2-11
2.6 RCI Setup for Replacement of an RCI Base Cabinet 2-12
2.6.1 RCI setup flow 2-12
2.6.2 Replacing an RCI host 2-12
2.6.3 Confirming RCI initialization 2-12
To confirm RCI initialization: 2-12
2.6.4 Connecting an RCI cable 2-13
2.6.5 Making an RCI address setting 2-13
To specify an RCI address: 2-13
To confirm the specified RCI address: 2-14
2.6.6 Making an RCI replacement setting. 2-14
To make an RCI replacement setting: 2-14
To confirm an RCI replacement setting: 2-15

CHAPTER 3 Command Reference. 3-1

3.1 setrci 3-1
NAME 3-1
SYNOPSIS 3-1
DESCRIPTION 3-1
PRIVILEGES 3-2
OPTIONS 3-2
OPERANDS 3-3
EXTENDED DESCRIPTION 3-3
EXAMPLES 3-5
EXIT STATUS 3-7
3.2 setrcic 3-8
NAME 3-8
SYNOPSIS 3-8
DESCRIPTION 3-8
PRIVILEGES 3-8
OPTIONS 3-9
OPERANDS 3-9

EXTENDED DESCRIPTION 3-9
EXAMPLES 3-10
EXIT STATUS 3-10

CHAPTER 4 Error Status 4-1

4.1 setrci error status 4-1
4.2 setrcic error status 4-2

Figures

Figure 1.1 Connections to RCI I/O units 1-4
Figure 1.2 Cluster connections 1-5
Figure 1.3 Duplicated configuration 1-5
Figure 1.4 Mixture of duplicated and unduplicated configurations 1-6

CHAPTER 1 RCI Overview

This chapter gives an overview of the Remote Cabinet Interface (RCI).

1.1 RCI Features

The RCI is a device control interface used for connections of I/O units to an RCI host.

In this manual, a base cabinet and an I/O unit that support the RCI are referred to as an RCI host and an RCI I/O unit (Note), respectively. Furthermore, RCI hosts and RCI I/O units are generally referred to as RCI units.

Note: RCI I/O unit might be described as RCI-IO unit.

While multiple RCI units consisting of an RCI host, another RCI host, and RCI I/O units are connected through the RCI, the RCI controls power supply to all these RCI units together and performs other controls on the RCI I/O units.

By using RCI cables to connect RCI units and RCI setting commands, the following RCI functions can be used:

- Connecting and controlling RCI I/O units
- Asynchronous RCI monitoring (Note) of RCI hosts in a cluster environment

Note: Asynchronous RCI monitoring is a function that immediately detects the panic state in any of the nodes that compose a cluster. The asynchronous monitoring enables the cluster to quickly recover from a failure in a monitored node.

Note: When the RCI network is used, adequate consideration of security is necessary for LAN connections of domains.

- RCI redundancy (only for the high-end system)

  The eXtended System Control Facility (XSCF) unit (Note) of the high-end system has a redundant configuration (duplicated configuration), realizing a high-reliability system. The redundant configuration of the XSCF unit can duplicate a network (RCI network) created by connecting RCI units with RCI cables.

  Note: The XSCF has a system control facility that runs on a service processor provided as standard in the base cabinet. A board with a preinstalled XSCF control program (XSCF firmware) is an XSCF unit.

1.2 RCI Functions

This section describes the functions provided by the RCI.

- RCI network status monitoring

  For stable operation of an RCI network, an RCI host constantly monitors the status of the RCI network. Upon detection of a failure in the RCI network, the RCI host collects a hardware log and reports the failure to the relevant domain.

- Control of power supply to RCI I/O units

  When an RCI host is powered on or off, the RCI host powers on or off, respectively, RCI I/O units synchronously. When at least one RCI host in an RCI network is powered on, all RCI I/O units are powered on synchronously. When all RCI hosts are powered off, all RCI I/O units are powered off synchronously.

- Interlocking mechanism for power supply to domains

  When remote power control mode is set for a domain, the domain is powered on and off in synchronization with other domains in the RCI network.

  To set remote power control mode in a domain, execute the setpwrmode command in the domain.

  For details, see the *Enhanced Support Facility User's Guide for Machine Administration.*

- Facility control

  Different kinds of facility control are available when the external power controller is connected to the RCI. The external power controller can link with the customer's existing facilities, power on each unit, recognize alarms of each unit, use the operator call function through a contact interface, and perform other such operations. Use the setrcic command at the setting of the facility control. For details on the facility control, contact authorized service personnel.

- Power-on wait

  The power-on wait function automatically powers on RCI I/O units before powering on RCI hosts.

  To use this function in a domain, execute the setpowerupdelay command in the domain.

  For details, see the *XSCF Reference Manual*.

- Asynchronous RCI monitoring

  The following functions are available when the asynchronous RCI monitoring function is enabled for a cluster:

  - Mutual monitoring for detection of abnormalities in RCI hosts (asynchronous monitoring)
    In addition to performing periodic monitoring by INTERCONNECT, this function detects abnormalities such as the panic state in an RCI host.
  - Reliable stopping of an abnormal RCI host
    This function stops, without fail, an abnormal RCI host without terminating a hang-up, slowdown, or generated panic.
  - Switch control
    This function controls line selector switching or other switching in the event that an RCI host fails.

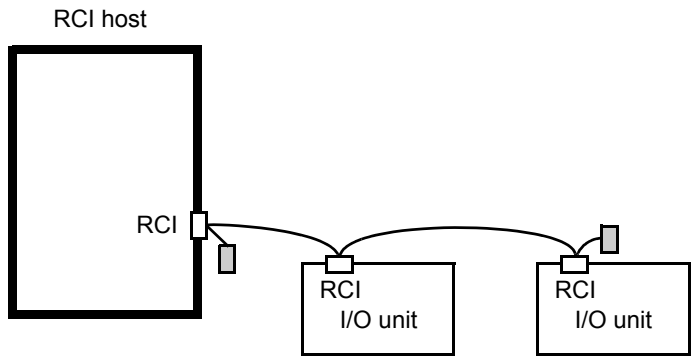
1.3 RCI Connection Scheme

This section outlines RCI connection patterns.

- Basic configuration

  Figure 1.1 shows a connection pattern with an RCI host and RCI I/O units.

  Figure 1.1 Connections to RCI I/O units



RCI cables are connected in sequence to respective units using T-branch connectors.

RCI terminating resistors must be connected to the T-branch connectors at both ends of a set of RCI connections.

Up to 32 RCIs including the RCI main unit can be connected.

Note that the maximum RCI cable length is 150 meters.

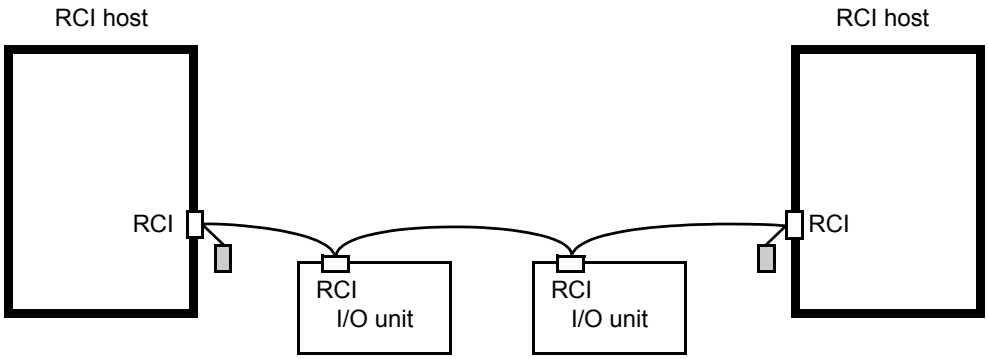
Use the repeater function of the external power controller to extend the cable length used and to increase the number of connected RCI units.

Note: The external power controller is included in the number of RCI units.

- Cluster configuration

  Figure 1.2 shows a cluster connection pattern.

  Figure 1.2 Cluster connections



  Up to 32 RCI hosts can be connected.

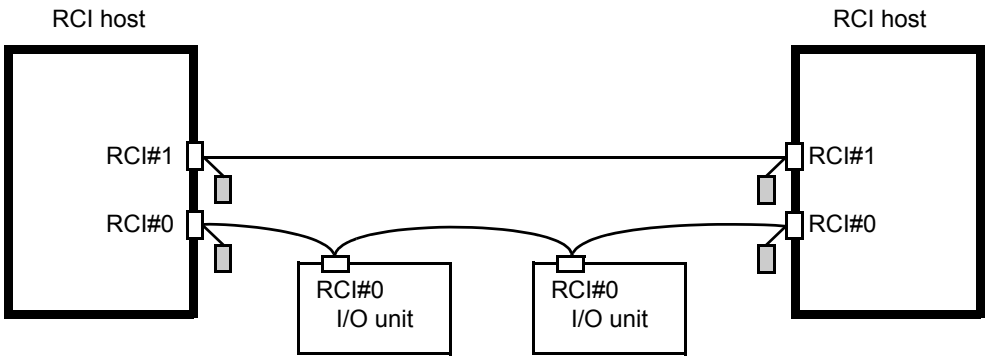
  The cluster connection requirements, such as the maximum cable length and the number of connectable RCI I/O units, are the same as the basic configuration requirements.

  Note: The repeater function of the external power controller cannot be used to increase the number of RCI base cabinets.

- Duplicated configuration

  Figure 1.3 shows the connection pattern of a duplicated configuration.

  Figure 1.3 Duplicated configuration

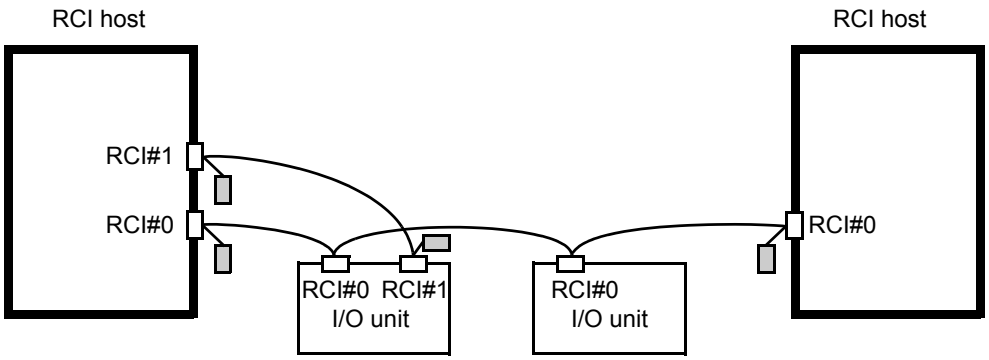


  RCI hosts can be constructed in a duplicated configuration only if their XSCF units are in a redundant configuration (duplicated configuration).

  Note: Do not connect an expansion XSCF unit to an RCI network connected to a base XSCF unit.

Figure 1.4 shows a connection pattern that connects both duplicated and unduplicated configurations.

Figure 1.4 Mixture of duplicated and unduplicated configurations



The pattern can contain RCI I/O units and RCI hosts that do not support a duplicated configuration.

Connect them to the duplicate system. Connect RCI hosts that do not support a duplicated configuration to the #0 system.

If an RCI host that does not support a duplicated configuration were already connected, RCI I/O units would be connected to the #0 system.

Note: When an RCI host of the duplicated configuration is connected with RCI hosts or RCI I/O units that do not support a duplicated configuration, it may fail to control the RCI host or the RCI I/O unit on the #0 system in the following case:

- When an XSCFU#0 failure generated an XSCF failover and the Active XSCF Unit switched to XSCFU#1.

In this case, maintenance work of XSCFU#0 becomes necessary.

CHAPTER 2 Setup of the RCI for Operation

This chapter describes setup information for use of the RCI.

2.1 Overview of RCI Setup

The RCI can be set up as follows.

Note: RCI setup as explained in this chapter is carried out by authorized service personnel.

- Prepare a serially-connected PC or a PC connected to the XSCF-LAN, specify its IP address, establish a connection to the XSCF, and use the XSCF shell.

The RCI is configured in the following types of setup:

- RCI Setup for Initial Installation
- RCI Setup for Addition of an RCI I/O Unit
- RCI Setup for Addition of an RCI Base Cabinet
- RCI Setup for Replacement of an RCI I/O Unit
- RCI Setup for Replacement of an RCI Base Cabinet

Each setup for RCI configuration is explained in the following manner:

- Explanation -
1 The explanation of each RCI setup begins with a description of the overall setup flow.
2 Setup procedures are then explained with setting examples.
• For detailed explanations and details on options of XSCF Shell commands, see the man pages or, Chapter 3, "Command Reference."
• This section does not explain in detail the connection between the XSCF and a PC or terminal and methods for logging in to the XSCF. For details, see the *XSCF User's Guide*.

2.2 RCI Setup for Initial Installation

This section explains the procedure for initial RCI setup, which assumes RCI settings have not been configured.

Note: Perform this work when this system is not using any RCI I/O unit.

2.2.1 RCI setup flow

RCI setup for initial installation contains the following steps:

1 Confirming RCI initialization
2 Connecting RCI cables
3 Making an RCI address setting
4 Making an RCI construction setting

2.2.2 Confirming RCI initialization

Before connecting an RCI cable to an RCI host, confirm that RCI settings have been initialized.

- To confirm RCI initialization:

1 Execute the setrci (8) command to display the RCI status.

```
XSCF> setrci -c stat
HOST
 address 000f7fff
 Inactive
The command completed successfully.
```

Confirm that "address" is 000f7fff (initial address value).
If RCI settings have not been initialized, perform the next step.

2 Execute the setrci (8) command to initialize RCI settings.

```
XSCF> setrci -c init
The command completed successfully.
```

2.2.3 Connecting RCI cables

Connect RCI cables.

Connect RCI units in sequence with RCI cables and their T-branch connectors. Connect RCI terminating resistors to the T-branch connectors at both ends of a set of RCI connections.

2.2.4 Making an RCI address setting

Specify "000101ff" as the RCI address for the first RCI host.

The RCI address must be unique in duplicate RCI networks.

- To specify an RCI address:

1 Execute the setrci (8) command, and specify an RCI address.

```
<Example> Specifying the RCI address 000101ff for the XSCF
XSCF> setrci -c set <1>
The command completed successfully.
```

- To confirm an RCI address:

1 Execute the setrci (8) command to display the RCI status.

```
XSCF> setrci -c stat
HOST
 address 000101ff
 Inactive
The command completed successfully.
```

Confirm that the "address" value is correct.
To correct the RCI address, start again from RCI initialization.

2.2.5 Making an RCI construction setting

Make an RCI network setting.

RCI addresses are automatically set for RCI I/O units connected through the RCI so that the units can use RCI functions.

Note: Before beginning this RCI setup work, confirm that AC cables are connected to all RCI units.

Note: To make an RCI construction setting for an RCI unit equipped with a main line switch, set the main line switch to the ON position.

- To make an RCI construction setting:

1 Execute the setrci (8) command, and make an RCI construction setting.

```
XSCF> setrci -c initconfig
.................................................
The command completed successfully.
```

- To confirm an RCI construction setting:

1 Execute the setrci (8) command to display the RCI status.

```
XSCF> setrci -c stat
HOST
 address 000101ff
 Active
LIST
 address  pwr alm I/F  sys-phase ctgry  dev-cls  sub-cls tm-out
 000101ff OFF -   ACT  -         host  0001     0b      -
The command completed successfully.
```

Confirm that the displayed LIST contents include the connected RCI unit.
For details on LIST contents, see Chapter 3, "Command Reference."

2.3 RCI Setup for Addition of an RCI I/O Unit

This section explains the setup procedure for adding an RCI I/O unit to this system for which RCI setup for initial installation has already been completed.

This work can be performed while an existing domain is running.

2.3.1 RCI setup flow

RCI setup for addition of an RCI I/O unit contains the following steps:

1 Connecting an RCI cable
2 Making an RCI expansion setting

2.3.2 Connecting an RCI cable

1 Insert a T-branch connector and an RCI cable into the existing set of connections of RCI cables.
2 Connect the T-branch connector to the RCI I/O unit to be added.

2.3.3 Making an RCI expansion setting

The added RCI I/O unit must be connected to the RCI network.

An RCI address is automatically set for the added RCI I/O unit so that the unit can use RCI functions.

An RCI expansion setting can be made only once from an arbitrary RCI host.

Note: Before beginning this RCI setup work, confirm that AC cables are connected to all RCI units.

Note: To make an RCI expansion setting for an RCI unit equipped with a main line switch, set the main line switch to the ON position.

- To make an RCI expansion setting:

1 Execute the setrci (8) command, and make an RCI expansion setting.

```
XSCF> setrci -c addconfig
.................................................
The command completed successfully.
```

- To confirm an RCI expansion setting:

1 Execute the setrci (8) command to display the RCI status.

```
XSCF> setrci -c stat
HOST
 address 000101ff
 Active
LIST
 address  pwr alm I/F   sys-phase  ctgry dev-cls sub-cls tm-out
 000101ff OFF -   ACT   -          host  0001    0b      -
 003001ff OFF -   ACT   -          disk  0400    04      -
The command completed successfully.
```

Confirm that the displayed LIST contents include the connected RCI I/O unit.
For details on LIST contents, see Chapter 3, "Command Reference."

2.4 RCI Setup for Addition of an RCI Base Cabinet

2.4.1 RCI setup flow

RCI setup for addition of an RCI host contains the following steps:

1 Confirming RCI initialization
2 Connecting an RCI cable
3 Making an RCI address setting
4 Making an RCI expansion setting

2.4.2 Confirming RCI initialization

Before connecting an RCI cable to an RCI host, confirm that RCI settings have been initialized.

- To confirm RCI initialization:

1 Execute the setrci (8) command to display the RCI status.

```
XSCF> setrci -c stat
HOST
 address 000f7fff
 Inactive
The command completed successfully.
```

Confirm that "address" is 000f7fff (initial address value).
If RCI settings have not been initialized, perform the next step.

2 Execute the setrci (8) command to initialize RCI settings.

```
XSCF> setrci -c init
The command completed successfully.
```

2.4.3 Connecting an RCI cable

Connect an RCI cable to the RCI host to be added.

1 Insert a T-branch connector and an RCI cable into the existing set of connections of RCI cables.

2 Connect the T-branch connector to the RCI host to be added.

Note: Always do Confirming RCI initialization before connecting an RCI cable to the RCI host.

2.4.4 Making an RCI address setting

Specify an RCI addresses in a range of 000102ff to 000120ff for the RCI host to be added.

The RCI address must be unique in the existing RCI network.

RCI addresses must be assigned in the order of 000102ff, 000103ff, 000104ff, and so on.

Specify the RCI address on the RCI host to be added.

- To specify an RCI address:

1 Execute the setrci (8) command, and specify an RCI address.

```
<Example> Specifying the RCI address 000102ff for the XSCF
XSCF> setrci -c set <2>
The command completed successfully.
```

Specify a decimal number for the fifth and sixth digits of the target RCI address.
A decimal number in a range of 1 to 32 can be used.

- To confirm the specified RCI address:

1 Execute the setrci (8) command to display the RCI status.

```
XSCF> setrci -c stat
HOST
 address 000102ff
 Inactive
The command completed successfully.
```

Confirm that the "address" value is correct.
To correct the RCI address, start again from RCI initialization.

2.4.5 Making an RCI expansion setting

The added RCI host must be connected to the RCI network.

The RCI address of the added RCI host is synchronized with those of existing RCI hosts so that the added cabinet can use RCI functions.

Make an RCI expansion setting on the added RCI host.

Note: Before beginning this RCI setup work, confirm that AC cables are connected to all RCI units.

Note: To make an RCI expansion setting for an RCI unit equipped with a main line switch, set the main line switch to the ON position.

- To make an RCI expansion setting:

1 Execute the setrci (8) command, and make an RCI expansion setting.

```
XSCF> setrci -c addconfig
..................................................
The command completed successfully.
```

- To confirm an RCI expansion setting:

1 Execute the setrci (8) command to display the RCI status.

```
XSCF> setrci -c stat
HOST
 address 000102ff
 Active
LIST
 address  pwr alm I/F   sys-phase   tgry dev-cls sub-cls tm-out
 000101ff OFF -   ACT   -           host  0001   0b      -
 000102ff OFF -   ACT   -           host  0001   0b      -
 003001ff OFF -   ACT   -           disk  0400   04      -
The command completed successfully.
```

Confirm that the displayed LIST contents include the added RCI host.
For details on LIST contents, see Chapter 3, "Command Reference."

2.5 RCI Setup for Replacement of an RCI I/O Unit

2.5.1 RCI setup flow

RCI setup for replacement of an RCI I/O unit contains the following steps:

1 Confirming an RCI address
2 Replacing an RCI I/O Unit
3 Making an RCI replacement setting

Note: Perform this RCI setup work for each RCI I/O unit to be replaced.

2.5.2 Confirming an RCI address

Confirm the RCI address or location of the RCI I/O unit to be replaced.

- To confirm an RCI address:

1 Push the service pin of the RCI I/O unit to be replaced.

2 Execute the setrci (8) command to display the address of the RCI I/O unit whose service pin is pushed.

```
XSCF> setrci -c idpin
RCI:XXXX VER:XX DATE:XXXX XX/XX XX:XX;XX
The command completed successfully.
```

If the RCI I/O unit to be replaced has failed and cannot make a transmission, its RCI address cannot be confirmed by the above operation. Perform the following operation to confirm the RCI address.

3 Execute the setrci (8) command to display a list of connected RCI units.

```
XSCF> setrci -c stat
HOST
 address 000102ff
 Active
LIST
 address  pwr alm I/F   sys-phase   tgry dev-cls sub-cls tm-out
 000101ff OFF -   ACT    -          host  0001    0b      -
 003001ff OFF -   ACT    -          disk  0400    04      -
 003002ff OFF -   INACT  -          disk  0400    04      -
 003003ff OFF -   ACT    -          disk  0400    04      -
The command completed successfully.
```

On the list, "INACT" is displayed in the "I/F" column of the RCI I/O unit that cannot make a transmission to the RCI.

- To confirm the location of an RCI I/O unit:

  If the RCI address of the target RCI I/O unit is already known, such as because of an error message, the location of the RCI I/O unit can be confirmed by specifying its RCI address and triggering blinking of its LED.

1 Execute the setrci (8) command to trigger blinking of the LED of the RCI I/O unit at the specified RCI address.

```
<Example> Specifying the RCI address 003002ff
XSCF> setrci -c ledon <003002ff>
.....
The command completed successfully.
```

2 Locate the RCI I/O unit whose LED is blinking.

3 Execute the setrci (8) command to stop the blinking LED of the RCI I/O unit.

```
XSCF> setrci -c ledoff
The command completed successfully.
```

2.5.3 Replacing an RCI I/O Unit

Remove the T-branch connector together with the RCI cables from the RCI I/O unit to be replaced. Replace the RCI I/O unit, and connect the T-branch connector and RCI cables to the new RCI I/O unit.

2.5.4 Making an RCI replacement setting

The added RCI I/O unit must be connected to the RCI network.

The RCI address of the added RCI I/O unit is synchronized with that of an existing RCI host so that the unit can use RCI functions.

An RCI expansion setting can be made only once from an arbitrary RCI host.

Note: Before beginning this RCI setup work, confirm that AC cables are connected to all RCI units.

Note: To make an RCI expansion setting for an RCI unit equipped with a main line switch, set the main line switch to the ON position.

- To make an RCI replacement setting:

1 Execute the setrci (8) command, and make an RCI replacement setting.

```
<Example> Replacing the RCI I/O unit at the RCI address 003002ff
XSCF> setrci -c replaceconfig <003002ff>
.................................................
The command completed successfully.
```

In <address>, specify the RCI address (eight-digit hexadecimal number) obtained by RCI address confirmation.

- To confirm an RCI replacement setting:

1 Execute the setrci (8) command to display the RCI status.

```
XSCF> setrci -c stat
HOST
 address 000102ff
 Active
LIST
 address  pwr alm I/F   sys-phase  ctgry dev-cls sub-cls tm-out
 000101ff OFF -   ACT   -          host  0001   0b      -
 003001ff OFF -   ACT   -          disk  0400   04      -
 003002ff OFF -   ACT   -          disk  0400   04      -
 003003ff OFF -   ACT   -          disk  0400   04      -
The command completed successfully.
```

On the list, confirm that "ACT" is displayed in the "I/F" column of the RCI I/O unit at the RCI address specified for the RCI replacement setting.

2.6 RCI Setup for Replacement of an RCI Base Cabinet

2.6.1 RCI setup flow

RCI setup for replacement of an RCI host contains the following steps:

1 Replacing an RCI host
2 Confirming RCI initialization
3 Connecting an RCI cable
4 Making an RCI address setting
5 Making an RCI replacement setting

Note: Perform this RCI setup work for each RCI host to be replaced.

2.6.2 Replacing an RCI host

Remove the T-branch connector together with the RCI cable from the RCI host to be replaced, and replace the RCI host with a new one.

Do not connect the removed T-branch connector to the new RCI host at this time.

2.6.3 Confirming RCI initialization

Before connecting an RCI cable again to a new RCI host, confirm that RCI settings have been initialized.

- To confirm RCI initialization:

1 Execute the setrci (8) command to display the RCI status.

```
XSCF> setrci -c stat
HOST
 address 000f7fff
 Inactive
The command completed successfully.
```

Confirm that the "address" value is 000f7fff (initial address value).
If RCI settings have not been initialized, perform the next step.

2 Execute the setrci (8) command to initialize RCI settings.

```
XSCF> setrci -c init
The command completed successfully.
```

2.6.4 Connecting an RCI cable

Connect the removed T-branch connector together with the RCI cable to the new RCI host.

Note: Always do Confirming RCI initialization before reconnecting the RCI cable to the RCI host.

2.6.5 Making an RCI address setting

Assign an RCI address to the new RCI host after replacement.

Make an RCI address setting on the new RCI host.

IMPORTANT

- Specify the same RCI address as that assigned to the old RCI host.

- To specify an RCI address:

1 Execute the setrci (8) command, and specify an RCI address.

```
<Example> Specifying the RCI address 000102ff for the XSCF
XSCF> setrci -c set <2>
The command completed successfully.
```

Specify a decimal number for the fifth and sixth digits of the target RCI address.
A decimal number in a range of 1 to 32 can be used.

- To confirm the specified RCI address:

1 Execute the setrci (8) command to display the RCI status.

```
XSCF> setrci -c stat
HOST
 address 000102ff
 Inactive
The command completed successfully.
```

Confirm that the "address" value is correct.
To correct the RCI address, start again from RCI initialization.

2.6.6 Making an RCI replacement setting

The new RCI host must be connected to the RCI network.

The RCI address of the new RCI host is synchronized with those of existing RCI hosts so that the new cabinet can use RCI functions.

An RCI replacement setting can be made on the new RCI host.

Note: Before beginning this RCI setup work, confirm that AC cables are connected to all RCI units.

Note: To make an RCI replacement setting for an RCI unit equipped with a main line switch, set the main line switch to the ON position.

- To make an RCI replacement setting:

1 Execute the setrci (8) command, and make an RCI replacement setting.

```
XSCF> setrci -c replaceconfig
.................................................
The command completed successfully.
```

- To confirm an RCI replacement setting:

1 Execute the setrci (8) command to display the RCI status.

```
XSCF> setrci -c stat
HOST
 address 000102ff
 Active
LIST
 address  pwr alm I/F   sys-phase  ctgry dev-cls sub-cls tm-out
 000101ff OFF -   ACT    -         host  0001    0b      -
 000102ff OFF -   ACT    -         host  0001    0b      -
 003001ff OFF -   ACT    -         disk  0400    04      -
The command completed successfully.
```

Confirm that the displayed LIST contents include the replacement RCI host.
For details on LIST contents, see Chapter 3, "Command Reference."

CHAPTER 3 Command Reference

3.1 setrci

- NAME

  setrci - configure or display the environment of the remote cabinet interface (RCI)

- SYNOPSIS

  setrci -c stat

  setrci -c init [-s *RCI_network]*

  setrci -c set *host_no*

  setrci -c initconfig [-s *RCI_network*]

  setrci -c addconfig [-s *RCI_network*]

  setrci -c replaceconfig [*RCI_address*]

  setrci -c ledon *RCI_address*

  setrci -c ledoff

  setrci -c idpin

  setrci -h

- DESCRIPTION

  The setrci(8) command configures or displays information that accompanies the initial setting and maintenance of the RCI environment.

  The following can be set or displayed:

stat	Displays the status of the RCI network.
init	Initializes the RCI setting. Initialization is only performed for the host that executes the command. If there are other hosts connecting to the RCI, initialization must be performed for each host.
set	Sets an RCI address. Use this specification when the RCI setting has been initialized. After the setting, "-c initconfig" or "-c addconfig" must be executed.
initconfig	Makes the RCI setting on the first host. An RCI I/O unit connected via RCI is searched for and found, and then an RCI address is assigned.

addconfig	Adds an RCI I/O unit or host. When an RCI I/O unit is added, the RCI I/O unit newly connected to RCI is searched for and found, and then an RCI address is assigned. When a host is added, it is also added to the RCI network. "-c set" must be executed beforehand on the added host to set the RCI address for the host.
replaceconfig	Replaces an RCI I/O unit or host. When an RCI I/O unit is replaced, the specified RCI address is assigned to the substitute RCI I/O unit. When a host is replaced, a substitute host is added to the RCI network after the information of the host to be replaced is deleted from the RCI network. "-c set" must be executed beforehand on the substitute host to set the RCI address for the host. An RCI address cannot be specified when replacing a host.
ledoff	Stops the blinking CHECK LED of an RCI I/O unit. This specification is used such as when the work for identifying an RCI I/O unit is completed.
idpin	Displays the RCI address of the RCI I/O unit whose ID-PIN has been pressed. This specification is used when checking the RCI address of an RCI I/O unit.

- PRIVILEGES

  You must have platadm or fieldeng privileges to run this command.

  Refer to setprivileges(8) for more information.

- OPTIONS

  The following options are supported:

-c stat	Displays the status of the *RCI network*.
-c init	Initializes the RCI setting.
-c set *host_no*	Sets the address specified by *host_no* for the RCI address. An integer number ranging from 0 to 32 must be specified for *host_no*. The specification of one address cannot be duplicated among hosts connected to RCI. In addition, addresses must be assigned sequentially starting from 1. "-c set" must be executed in the state where initialization has been completed by "-c init".
-c initconfig	Make the RCI setting at initial setting. "-c initconfig" must be executed when the RCI setting has been initialized by "-c init" and the RCI address has been set by "-c set".
-c addconfig	Makes the RCI setting for when an RCI I/O unit or host is added.
-c replaceconfig	Makes the RCI setting for when an RCI I/O unit or host is replaced.
-c ledon	Makes the CHECK LED of an RCI I/O unit blink.
-c ledoff	Stops the blinking CHECK LED of an RCI I/O unit.

-c idpin	Displays the RCI address of the RCI I/O unit whose ID-PIN has been pressed.	
-h	Displays usage statement. When used with other options or operands, an error occurs.	
-s *RCI_network*	Specifies an RCI network. Either of the networks shown below can be specified for *RCI_network*. The specification must be made together with "-c init", "-c initconfig" and "-c addconfig".	
	RCI-0	Specifies the RCI network on the #0 side.
	RCI-1	Specifies the RCI network on the #1 side

- OPERANDS

The following operands are supported:

RCI_address	Specifies a target RCI address. A value in any of the following ranges can be specified for *RCI_address*:
	003001ff-00307fff
	007001ff-00707fff
	002001ff-00207fff
	006001ff-00607fff

- EXTENDED DESCRIPTION

  - When "-c stat" is specified, the following states are displayed:

RCI-x	RCI network name.	
address	RCI address. It is displayed as an eight-digit hexadecimal number. When the RCI address of the host has not been set, the default value (00ff7fff) is displayed.	
Active/Inactive	RCI state. Inactive means that the RCI is in the initial state, and Active means that the RCI setting has been made.	
	Inactive	The RCI is in the initial state.
	Active	The RCI setting has been made.
Mainte	The mode switch is Service state.	

  - When the RCI state is Active, the following information is displayed after List:

address	The address of the connected RCI unit.	
pwr	Power state of the RCI unit.	
	ON	Powered on.
	OFF	Powered off.
alm	Alarm state of the RCI unit.	
	-	Normal state.
	ALM	Alarm state.
	WRN	Warning state.

I/F	RCI unit interface status.	
	ACT	Valid state.
	INACT	Invalid state.
sys-phase	Operating state of the host connected to RCI. One of the following is displayed:	
	power-off	Powered off.
	panic	In the panic state.
	shdwn-start	Shutdown in progress.
	shdwn-cmplt	Shutdown has completed.
	dump-cmplt	Dump has completed.
	booting	System being started.
	running	System in operation.
	-	Not support the status display.
ctgry	Category of the RCI unit. One of the following is displayed:	
	host	Host unit.
	disk	File unit.
	rcic	External power control device.
	linesw	Line switch.
	Other	Other devices.
dev-cls	Device class of the RCI unit.	
sub-cls	Subdevice class of the RCI unit.	
tm-out	Idle monitoring timeout period of RCI. Since it doesn't support the status display, "-" is always displayed.	

- "-c init" needs to be executed in the system power-off status.
- "When -c initconfig", "-c addconfig", or "-c replaceconfig" is being executed, or the setrcic(8) command is being executed, do not execute the setrci(8) command on another host.
- When the setrci(8) command is executed, set all RCI units that are connected to RCI into the power-on state or standby state.
- Executing the setrci(8) command on a model that does not support the RCI function causes an error to occur.

- EXAMPLES

  EXAMPLE 1: Makes the first RCI setting on the first host in an M3000/M4000/M5000 server.

```
XSCF> setrci -c init
RCI-0
..........
The command completed successfully.
RCI-1
..........
The command completed successfully.
XSCF> setrci -c set 1
RCI-0
..........
The command completed successfully.
RCI-1
..........
The command completed successfully.
XSCF> setrci -c initconfig
RCI-0
..........
The command completed successfully.
RCI-1
..........
The command completed successfully.
XSCF> setrci -c stat
RCI-0

HOST
 address 000101ff
 Active
LIST
 address  pwr alm I/F  sys-phase ctgry  dev-cls  sub-cls tm-out
 000101ff ON  -   ACT  -         host   0001     0b      -
 003001ff ON  -   ACT  -         disk   0400     10s     -

The command completed successfully.
RCI-1

HOST
 address 004101ff
 Active
LIST
 address  pwr alm I/F  sys-phase ctgry  dev-cls  sub-cls tm-out
 004101ff ON  -   ACT  -         host   0001     0b      -

The command completed successfully.
```

EXAMPLE 2: Makes the first RCI setting on the first host in an M8000/M9000 server.

```
XSCF> setrci -c init
..........
The command completed successfully.
XSCF> setrci -c set 1
..........
The command completed successfully.
XSCF> setrci -c initconfig
..........
The command completed successfully.
XSCF> setrci -c stat
RCI-0

HOST
 address 000101ff
 Active
LIST
 address  pwr alm I/F  sys-phase ctgry  dev-cls  sub-cls tm-out
 000101ff ON  -   ACT  -         host   0001     0b      -
 003001ff ON  -   ACT  -         disk   0400     10s     -

The command completed successfully.
```

- EXIT STATUS

The following exit values are returned:

0	Successful completion.
>0	An error occurred.

3.2 setrcic

- NAME

  setrcic - make the setting of an external power control device or display its status.

- SYNOPSIS

  setrcic -c exrdy *RCI_address* [*time*]

  setrcic -c opcalldisp *RCI_address*

  setrcic -c opcallon *RCI_address callNo*

  setrcic -c opcalloff *RCI_address callNo*

  setrcic -h

- DESCRIPTION

  The setrcic(8) command makes the setting of an external power control device or displays its status.

  The following can be set or displayed: Multiple items cannot be set at a time.

exrdy	Sets or displays the EXRDY monitoring timeout periods of the specified external power control devices. If the setting is inconsistent with the external equipment wait time, an error occurs.
opcalldisp	Displays the status of the operator call signal of the specified external power control devices.
opcallon	Sets the operator call signals of the specified external power control devices on.
opcalloff	Sets the operator call signals of the specified external power control devices off.

- PRIVILEGES

  You must have platadm or fieldeng privileges to run this command.

  Refer to setprivileges(8) for more information.

- OPTIONS

The following options are supported:

-c exrdy *RCI_address* [*time*]	Sets the EXRDY monitoring timeout period of the specified external power control devices. Set the EXRDY monitoring timeout period in units of minutes for *time*. If 0 is specified, EXRDY monitoring is disabled. If *time* is omitted, the EXRDY monitoring timeout period is displayed.
-c opcalldisp	Displays the status of the operator call signals of the specified external power control devices.
-c opcallon *RCI_address callNo*	Sets the operator call signals of the specified external power control devices on. Setting is made for the devices corresponding to the bits of *callNo* that contain "1".
-c opcalloff *RCI_address callNo*	Sets the operator call signals of the specified external power control devices off. Setting is made for the devices corresponding to the bits of *callNo* that contain "1".
-h	Displays usage statement. When used with other options or operands, an error occurs.

- OPERANDS

The following operands are supported:

RCI_address	Specifies a target RCI address. A value in any of the following ranges can be specified for *RCI_address*:
	003001ff-00307fff
	007001ff-00707fff
time	Sets the EXRDY monitoring timeout period when "-c exrdy" is specified in units of minutes. Any decimal integer number ranging from 0 to 85 can be specified.
callNo	Specifies operator call information. A two-digit hexadecimal number can be specified.

- EXTENDED DESCRIPTION

- When the setrci(8) command or setrcic(8) command is being executed on another host in the RCI network, do not execute the setrcic(8) command.
- When the setrcic(8) command is executed, set all RCI units that are connected to RCI into the power-on state or standby state.
- Executing the setrcic(8) command on a model that does not support the RCI function causes an error to occur.

- EXAMPLES

EXAMPLE 1: Makes the setting of external power control.

```
XSCF> setrcic -c exrdy 003001ff 10

The command completed successfully.
XSCF> setrcic -c exrdy 003001ff
address:003001ff exrdy:10 min

The command completed successfully.
XSCF> setrcic -c opcallon 003001ff 0c

The command completed successfully.
XSCF> setrcic -c opcalldisp 003001ff
address:003001ff callNo:0c

The command completed successfully.
XSCF> setrcic -c opcalloff 003001ff 0c

The command completed successfully.
XSCF> setrcic -c opcalldisp 003001ff
address:003001ff callNo:00

The command completed successfully.
```

- EXIT STATUS

The following exit values are returned:

0	Successful completion.
>0	An error occurred.

CHAPTER 4 Error Status

4.1 setrci error status

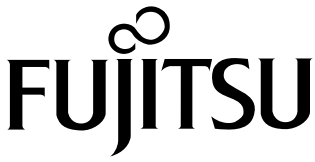
When the RCI construction by the setrci command ends abnormally and "Operation failed error status: XX" is displayed, the displayed error status code and explanation are described to the following table.

Code	Explanation
00	Detected the duplicate RCI address.
01	RCI address of current unit is not configured or false.
02	Detected the duplicate RCI address of RCI host, or detected the undefined RCI address.
03	RCI address of current unit is not configured.
04	Over maximum entry of RCI table.
05	Detected anomaly in RCI table receiving.
06	Detected anomaly in RCI table sending.
07	Receiving status check from undefined RCI device.
08	Detected the loss of RCI master.
09	Detected anomaly of RCI table.
0a	Synchronous time out of RCI table.
0b	Synchronous retry out of RCI table.
0c	Detected anomaly of RCI table.
0d	Failed the version check of RCI table.
0e	Detected anomaly of RCI table.
0f	Detected anomaly in synchronous with RCI Neuron chip.
20	Detected the duplicate RCI address in RCI I/O unit (Expansion file unit, External power controller).
30	Detected the duplicate RCI address in RCI I/O unit (Line selector switch).
fd	RCI construction cannot be constructed, or it was cancelled.
fe	Other RCI unit is constructing the RCI network.
ff	RCI setup procedure is false.

4.2 setrcic error status

When the RCI construction by the setrcic command ends abnormally and "Operation failed error status: XX" is displayed, the displayed error status code and explanation are described to the following table.

Code	Explanation
-1	Detected an RCI transmission error.
-2	Terminated the command execution due to RCI busy. (Note 1)
-3	Internal error occurred in XSCF. (Note 2)
Note 1: After a certain period of time, re-execute the setrcic command. When this case reappears, please contact our field engineer. Note 2: Please contact our field engineer.	


FUJITSU